

# ROAD ANGEL™ plus



## USER GUIDE

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The UK's best selling driver  
safety camera alert systems

## **Thank you for buying your ROAD ANGEL Plus**

As our roads become busier, more congested and more regulated, staying alert to road and traffic conditions is a challenge to everyone. Even the most conscientious driver can have a momentary lapse of concentration that could easily lead to an accident or a fine and points.

ROAD ANGEL Plus is specially designed to be a simple-to-use addition to any vehicle, to alert and warn you in advance of known danger areas. In the comprehensive ROAD ANGEL Plus database are stored Police, Local Authority and Ministry of Transport designated danger spots, including accident black spots and safety camera locations.

Using the latest Global Positioning Satellite (GPS) technology, ROAD ANGEL Plus compares your position with the known danger spot locations and gives you an audible and visual warning as you approach them. An accurate GPS speedometer in the display gives you time to adjust your driving to the approaching danger.

The safety of you and your passengers is our prime consideration, and we trust that for all the miles you drive, your ROAD ANGEL Plus will enhance the safety and enjoyment of your journey. Join other ROAD ANGEL Plus users in guarding your life and livelihood.

We are pleased to have you as a valued customer and hope you will be delighted with your fully integrated GPS and Laser ROAD ANGEL Plus. Having listened to our customers we think the new features will make this product your perfect driving companion.



Dave Clark, Managing Director

Blackspot Interactive Ltd.



***The directors of Blackspot Interactive Ltd sell ROAD ANGEL Plus as a road safety enhancement device. Driving within the speed limits at all times and within the limitations of the road condition and your abilities is paramount. The directors of Blackspot Interactive Ltd take no responsibility for the use of ROAD ANGEL Plus for other purposes than those stipulated.***

# Contents

<b>1. Introduction.....</b>	<b>1</b>
Front View .....	2
Back View.....	3
The ROAD ANGEL Plus Database.....	4
Using ROAD ANGEL Plus Abroad.....	4
Subscriptions.....	5
Warranty.....	5
Battery Power and Recharging .....	5
<b>2. Unpacking the Box .....</b>	<b>6</b>
<b>3. Registration.....</b>	<b>7</b>
<b>4. Putting It All Together.....</b>	<b>9</b>
Security .....	9
Assembling the Windscreen Mounting Bracket.....	10
Fitting the ROAD ANGEL Plus.....	12
Attaching the Visor .....	13
Using the Dashboard Pad.....	13
Mounting ROAD ANGEL Plus on a Motorbike.....	14
Rear laser detection.....	14
<b>5. Getting Started.....</b>	<b>16</b>
<b>6. Hazard Warnings .....</b>	<b>17</b>
Understanding the Display.....	17
Standby mode.....	17
Alert mode .....	17
Audio and Speech Warnings.....	18
Alert Types .....	19

<b>7. Updating the Database .....</b>	<b>21</b>
System requirements .....	21
Updating .....	22
<b>8. Customising ROAD ANGEL Plus .....</b>	<b>23</b>
<b>Changing Settings .....</b>	<b>23</b>
<b>Menu Settings .....</b>	<b>26</b>
Alerts .....	26
Distances.....	27
GPS.....	27
Unit Data .....	28
Display.....	28
<b>9. Adding and Deleting Danger Zones .....</b>	<b>29</b>
<b>Deleting Zones .....</b>	<b>29</b>
<b>Adding New Locations .....</b>	<b>29</b>
<b>Adding an Average Speed Monitoring Section (SPECs Zone).....</b>	<b>30</b>
<b>10. Background Information .....</b>	<b>31</b>
<b>About Global Positioning Satellites (GPS) .....</b>	<b>31</b>
<b>Laser Detection.....</b>	<b>31</b>
How mobile laser traps operate .....	31
How the enforcement officer chooses which vehicles to target..	31
<b>Targeting Explained.....</b>	<b>32</b>
Short range targeting .....	32
Long range targeting.....	32
Following a vehicle being targeted .....	33
Rear detection of laser.....	33
<b>Speed Cameras and Black Spots.....</b>	<b>34</b>
<b>11. Accessories .....</b>	<b>37</b>

# 1. Introduction

ROAD ANGEL Plus is a standalone, cable-free, GPS camera and accident black spot locator. It uses the latest global positioning satellite and laser detection technology (see page 31) to give you audible and visible alerts as you approach hazardous sections of road:

- Accident black spots (as designated by the Police and Local Authorities)
- Safety cameras
- Mobile laser guns
- Mobile roadwork cameras
- Average speed monitoring zones
- Primary schools and congestion charging zones

ROAD ANGEL Plus also displays a constantly updated and accurate speed reading. Should you break down, ROAD ANGEL Plus allows you to pinpoint your location and direct rescue services to your vehicle.

## ***IMPORTANT SAFETY INFORMATION!***



***Never attempt to alter settings while you are driving. Ask a passenger to make any changes or find a suitable and safe place to pull over and park your vehicle.***

***ROAD ANGEL Plus is designed as an aid to safe driving. Always drive within the speed limits and traffic regulations, taking account of the road conditions and your own abilities.***

***ROAD ANGEL Plus should not be used in any way that may interfere with the safe operation of your vehicle. Ensure that your ROAD ANGEL Plus and its associated equipment and cables are securely and correctly mounted within the vehicle.***

***Blackspot Interactive Ltd assumes no responsibility for any damage or injury resulting from the use of this product.***

## Front View

### Menu/On/Off Button

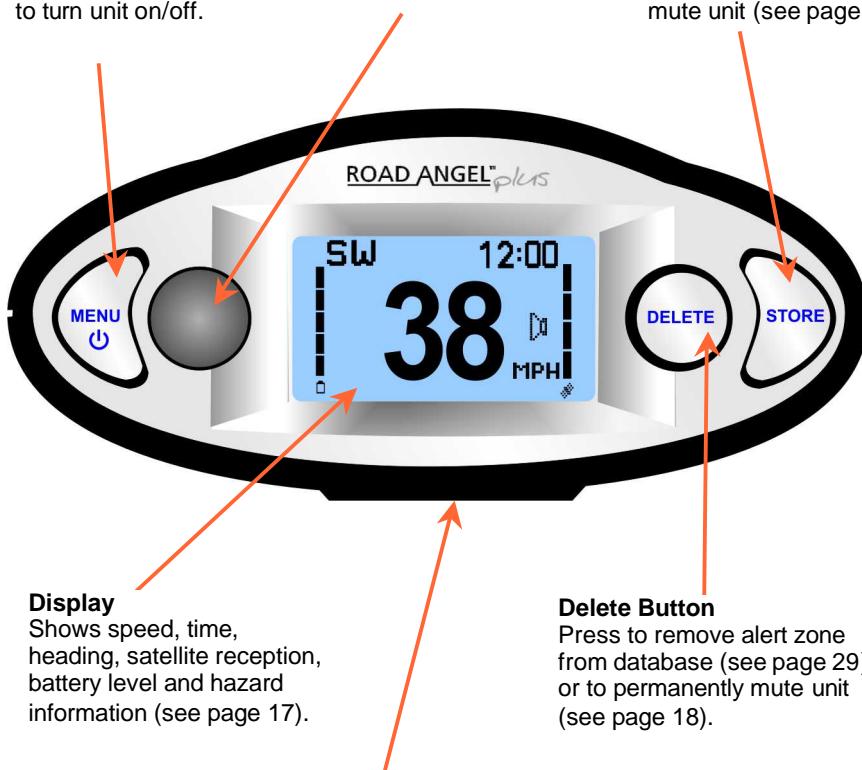
Press to enter and navigate ROAD ANGEL Plus settings (see page 23). Press and hold down to turn unit on/off.

### Rear Laser Sensor

Detects laser speed measurement devices targeting rear of vehicle (see page 31).

### Store Button

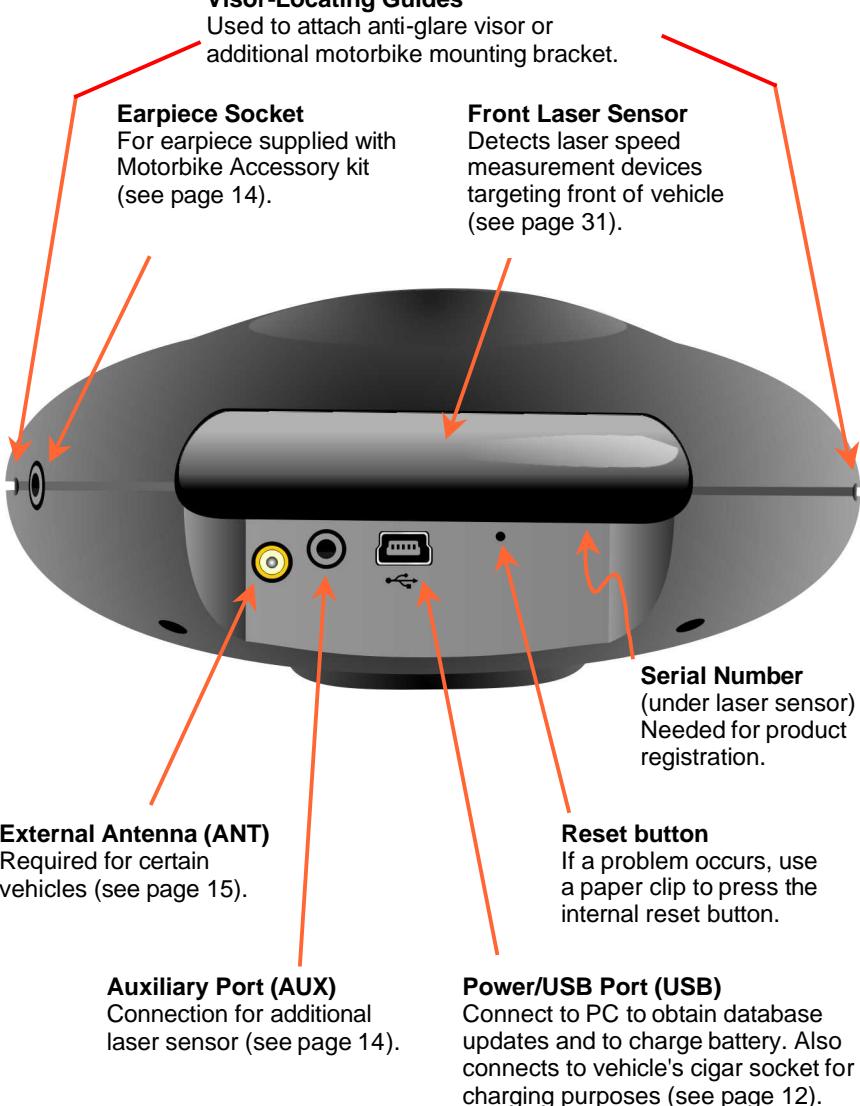
Press to enter new zones (see page 29), confirm new settings (see page 23) or to mute unit (see page 18).



### Magnetic Base

Magnet in base of unit secures ROAD ANGEL Plus to rubberised metallic disk on mounting bracket or dash pad.

## Back View



## ***The ROAD ANGEL Plus Database***

ROAD ANGEL Plus uses a database of Police, Local Authority and Ministry of Transport designated danger spots, including accident black spots and safety camera locations, primary schools and congestion charging zones. Your ROAD ANGEL Plus can store up to 50,000 unique danger locations. Using the latest Global Positioning Satellite (GPS) technology, ROAD ANGEL Plus compares your position with known danger spot locations and gives you an audible and visual warning as you approach them.

It is critical to the accurate operation of your ROAD ANGEL Plus that you update your unit regularly to maintain the very latest data. With up to 100 new hazard locations added each month, we suggest that you update your ROAD ANGEL Plus every fortnight. If you are a high mileage driver, using unfamiliar roads, we recommend weekly updates.

To qualify for database updates:

- 1. Register your ROAD ANGEL Plus with Blackspot Interactive Ltd.**  
You cannot update the database until you have registered (see page 6).
- 2. Set up a monthly or yearly Direct Debit (see page 5).** You are prompted to do this after registration. Your ROAD ANGEL Plus comes with an initial, free, 6-month subscription.

## ***Using ROAD ANGEL Plus Abroad***

Your ROAD ANGEL Plus is specifically designed for use within its designated country, as stated on the packaging. It will have limited functionality in other countries because the appropriate camera/safety GPS data will not be present.



***IN MOST OF EUROPE, LASER DETECTION DEVICES, INCLUDING ROAD ANGEL Plus, ARE ILLEGAL. PUNISHMENTS FOR CARRYING SUCH A DEVICE (EVEN IF IT IS NOT IN USE) RANGE FROM IMPRISONMENT, CONFISCATION OF VEHICLE, A DRIVING BAN AND/OR A HEAVY FINE.***

If you intend to use ROAD ANGEL Plus abroad, seek independent legal advice prior to departure.

## **Subscriptions**

Your ROAD ANGEL Plus comes with a free subscription for six months of database updates and product support. It is critical to the operation of your ROAD ANGEL Plus that you update the unit regularly and so continued subscription is essential. With constant additions to the ROAD ANGEL Plus database (1000+ sites per year), the benefit of your ROAD ANGEL Plus and the protection it provides will be dramatically reduced if you fail to maintain the database.

In order to receive free access to updates for the first six months, you will be asked to complete an online Direct Debit form after registration. If you prefer, you may print the form and post it to us (our address is on the front of this manual). There are two subscription options: monthly or yearly. Current subscription rates can be found at <http://www.blackspot.com/>. We will not debit your account until the first 6-month period has elapsed.

## **Warranty**

Your ROAD ANGEL Plus is guaranteed for one year from the date of purchase from all defects that occur with normal use. If your unit fails to perform as specified in these instructions, please visit:

<http://www.blackspot.com/warranty>

## **Battery Power and Recharging**

ROAD ANGEL Plus is a cable-free device – it can operate independently using power from its internal rechargeable battery for up to 8 hours. You can also power ROAD ANGEL Plus directly from the cigar socket on your vehicle or from a USB port on a PC using one of the supplied cables.

The unit's battery level is indicated by a five-bar meter on the left side of the display (see page 17). The number of blocks shown indicates the current battery strength. When ROAD ANGEL Plus is on charge, it flashes any remaining blocks sequentially.

When one single bar is showing it will flash, indicating that the battery in your ROAD ANGEL Plus needs to be charged. You can charge the battery using the in-car cigar lighter adapter and cable, or by connecting it to a USB port on your PC. It takes approximately 6 hours to fully charge the ROAD ANGEL Plus but it can be used whilst charging (you can charge the ROAD ANGEL Plus at any time; there is no need to wait until the battery is completely flat, unlike some rechargeable devices).

To conserve battery power, the unit automatically switches itself off if it is stationary for more than 10 minutes. To resume use, press and hold the **Menu** button.

## 2. Unpacking the Box

Empty all the parts out of the box and familiarise yourself with each item. Each pack contains the following:



### 3. Registration



*If you're in a rush to get started, you can come back to this step later. However, it is important that you register your ROAD ANGEL Plus as soon as possible after purchase.*

You will need:

1. A PC with Internet access running Microsoft Windows 98SE, ME, 2000, or XP
2. Internet Explorer version 5.5 or above

To register online:

1. Go to [www.blackspot.com](http://www.blackspot.com)
2. Click on the *Product Registration* link. The Product Registration form is displayed.
3. Enter your ROAD ANGEL Plus's serial number. You can find this on the back of the unit.

4. Click on the **Next** button.

The registration process normally takes one full working day – you can then use the software to update your ROAD ANGEL Plus.

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## **?** Why should I register?

Registration is important for two reasons:

- a) You cannot update the unit until it has been registered. Hazard and safety camera database information may be significantly out-of-date at the time of purchase and should be updated as soon as possible.
- b) Without registration, we cannot resolve warranty issues, log queries or solve problems with your ROAD ANGEL Plus.

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## **?** How do I update my ROAD ANGEL Plus?

To update ROAD ANGEL Plus, you will need to install the update software on a PC with Internet access. You are prompted to download the update software once you have completed the online product registration. You can also download the software directly from our website via the Customer Support section at [www.blackspot.com](http://www.blackspot.com).

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## **?** How often should I update my ROAD ANGEL Plus?

As a guide, we recommend that you update your ROAD ANGEL Plus every two weeks.

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## **?** My ROAD ANGEL Plus keeps displaying the 'Please register...' message every time it is switched on.

You need to complete an update of your ROAD ANGEL Plus.

## 4. Putting It All Together

We recommend that you install your ROAD ANGEL Plus on the dashboard of your vehicle. ROAD ANGEL Plus has an internal high sensitivity GPS antenna and requires a clear view of the sky to communicate with GPS satellites.

If you want to install ROAD ANGEL Plus anywhere else within your vehicle, you will require an external GPS antenna. Please visit [www.blackspot.com](http://www.blackspot.com) for details.

ROAD ANGEL Plus has a quick release magnetic base and is supplied with:

- A bracket for mounting ROAD ANGEL Plus on the front windscreen.
- A mounting pad for fixing ROAD ANGEL Plus directly onto the dashboard. Use this option if your vehicle has low profile windscreen wipers or if it is more convenient than the windscreen mount.

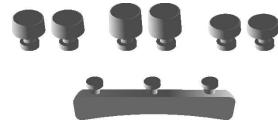
### **Security**

Owing to the high number of thefts, we strongly suggest you remove your ROAD ANGEL Plus and its bracket from view when you leave your vehicle.

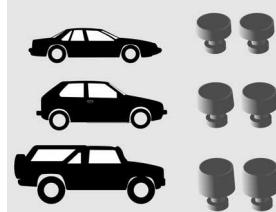
Please contact Blackspot Interactive Ltd if your unit is stolen or lost. Each ROAD ANGEL Plus is identified by a unique serial number on the base. We can use this number to block the unit from being updated. Any attempt to do so removes all the data from the device and renders it useless. We can also detect any attempt to re-register it. This has frequently resulted in the safe return of a ROAD ANGEL Plus to its rightful owner.

## Assembling the Windscreen Mounting Bracket

1. Locate the seven anti-vibration dampers; there are three pairs of round dampers and a long rectangular bar.



2. Select a pair of dampers according to the pitch of your vehicle's windscreen:



Windscreen pitch	Damper type
Low, streamlined e.g. Sports car style	short
Standard e.g. Saloon style	medium
Upright e.g. 4X4 style	long

3. Insert the selected pair of dampers into the two holes towards the back of the bracket, and slide towards the back. These dampers hold the bracket at the correct angle and stop it from touching the windscreen.

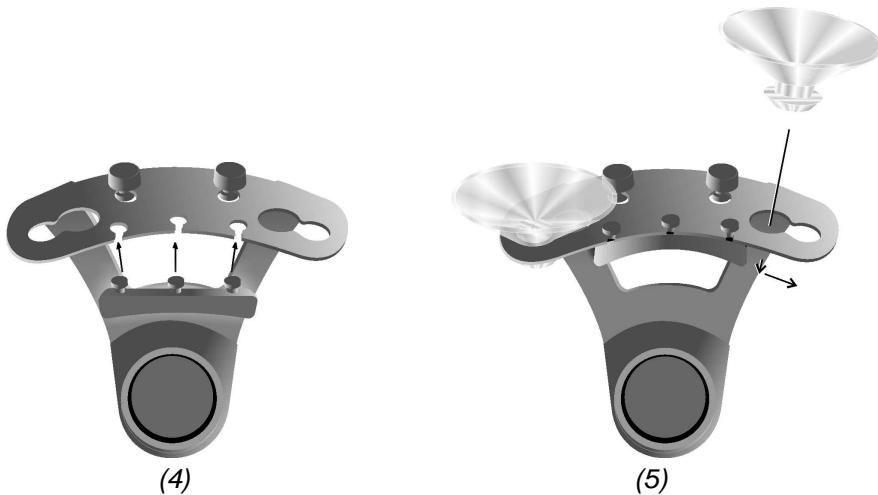


*You may need to experiment with different combinations of the dampers to get the best fit.*



(3)

4. Press the rectangular damper into the three holes along the front edge of the bracket. This damper stabilises the ROAD ANGEL Plus in the mounting bracket.



5. Attach the two clear suction cups. Push the cups into the large holes on the top of the bracket. Then, to lock them position, slide each cup across to the smaller hole at the outer edge of the bracket.



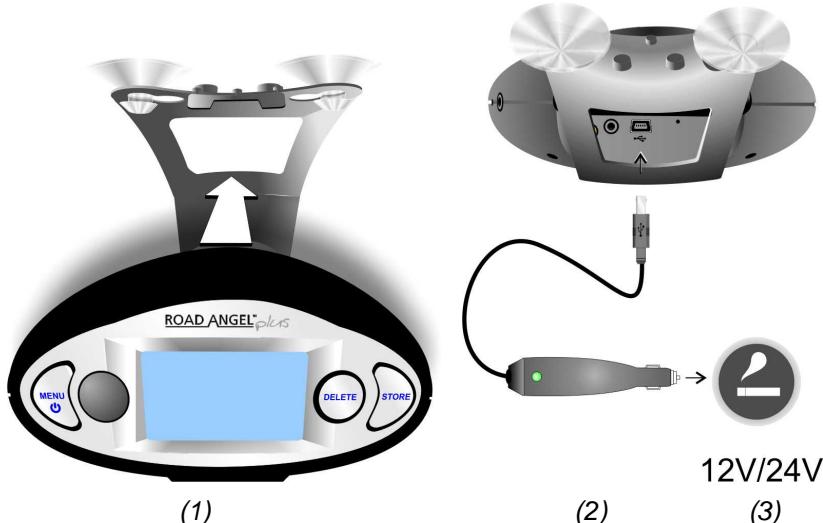
***Do not leave the bracket on the front windscreens without the product attached, for security reasons (see page 9).***

## Fitting the ROAD ANGEL Plus



**We strongly recommend that ROAD ANGEL Plus is positioned in the centre of the front windscreen low down, just above the dashboard.**

1. Slide the ROAD ANGEL Plus unit into the mounting bracket.



2. The new unit will need charging. Choose a power cable.

ROAD ANGEL Plus is supplied with two types of power cable (see page 6). Use the cable that suits your vehicle according to the location of your vehicle's cigar socket (see page 15 for information about hardwiring).



*Alternatively, you could charge the internal battery by connecting your unit to a USB port on a PC using the supplied cable.*

3. Use the cable to connect the USB port on the unit to your vehicle's cigar socket.
4. Ensure that the cable does not interfere with any of the vehicle's controls or airbag modules. If you use your cigar socket for any other devices, a dual adaptor may be used.

You are now ready to use the unit for the first time.

## Attaching the Visor

ROAD ANGEL Plus comes with a visor that can be attached to shade the display from bright sunlight and stop reflections onto the windscreen at night. Attach the visor using the two locating notches on each side of the unit (see page 3).



*The visor cannot be used in conjunction with the Motorbike Accessory kit.*

## Using the Dashboard Pad

The mounting bracket allows you to put the unit in the best position for GPS reception, laser detection and general viewing. ROAD ANGEL Plus is also supplied with an adhesive pad allowing you to mount the unit directly on the dashboard. This option is not suitable for all vehicles.

Use this method if the windscreen wipers on your vehicle are low profile and do not present an obstruction to GPS reception or forward laser detection. Also ensure that your ROAD ANGEL Plus is not located close to any heater vents.

To use the pad, remove the backing from the base and fix it to the dashboard. Place your ROAD ANGEL Plus directly onto the rubber pad where it will be held firmly.

## **Mounting ROAD ANGEL Plus on a Motorbike**

The windscreen mounting bracket can be used to mount ROAD ANGEL Plus under the screen of a sports bike. However, Blackspot Interactive Ltd also sells an additional Motorbike Accessory Kit for the ROAD ANGEL Plus. This includes a mounting bracket specially designed for motorbike windshields, a power lead, terminal connectors and an earpiece.

The earpiece supplied with the Motorbike Accessory Kit can be used to provide audible warnings inside a helmet.

ROAD ANGEL Plus is NOT waterproof. If it is going to be used in all weather conditions, then a tank bag or another type of waterproof holder is recommended.



### **Rear laser detection**

When used on a motorbike, ROAD ANGEL Plus is limited to forward laser detection because its rear-facing sensor is blocked by the rider. To solve this problem, Blackspot Interactive Ltd can supply an additional laser sensor for fixing to your rear number plate. When connected to the AUX socket on ROAD ANGEL Plus, this provides a rear laser detection capability. Note that because of power limitations, only one sensor may be connected to the AUX socket.

Please visit [www.blackspot.com](http://www.blackspot.com) for details of any of these products.



*Electrical interference may cause false alarms. Please route all cables away from the ignition circuit of the bike.*



## Where should I put my ROAD ANGEL Plus?

ROAD ANGEL Plus has a high sensitivity GPS antenna and requires a clear view of the sky to receive information from GPS satellites. We highly recommend that ROAD ANGEL Plus is positioned in the centre of the front windscreen, low down, just above the dashboard. If screen glare is a problem in this position, try installing the unit beside the driver's "A-pillar". Check that the GPS reception operates correctly in this position.

If you want to install ROAD ANGEL Plus anywhere else within your vehicle, you may require an external GPS antenna. Visit [www.blackspot.com](http://www.blackspot.com) for details.



**NO ROAD ANGEL PLUS OR ASSOCIATED ITEMS SHOULD BE ATTACHED TO OR PLACED ACROSS THE PADDED SURFACE OF THE AIRBAG MODULE ON THE PASSENGER SIDE OF THE DASH PANEL. ALL WIRING MUST BE TUCKED AWAY SO AS NOT TO INTERFERE WITH ANY OF THE VEHICLE'S CONTROLS.**



## My car has a UV/heated windscreens

UV screens block GPS signals from entering the vehicle, stopping ROAD ANGEL Plus from acquiring its position. This can be a problem with certain models of vehicle, i.e. BMW, Mercedes, Renault, Peugeot & Citroen. Heated screens can also affect GPS signal strength.

If your vehicle has a UV or heated screen, you may need an external antenna (please visit [www.blackspot.com](http://www.blackspot.com) for details). Most vehicles fitted with a UV screen have a defined section behind the rear view mirror where you can fit the antenna.



## Can I hardwire the unit?



**ROAD ANGEL Plus has a 5V regulator built into its power adapter. If the cable is cut and used to hardwire the unit into the vehicle, you will damage the ROAD ANGEL Plus.**

To hardwire ROAD ANGEL Plus into your vehicle, purchase a cigar socket; wire this into the power system and use with the supplied cable and adapter



**Consult an auto electrician if you are unsure how to carry out this procedure as incorrect hardwiring may affect the validity of vehicle and product warranty. Consult vehicle manufacturer if in doubt.**

## 5. Getting Started

1. Find a location outside with a clear view of the sky (away from obstacles such as tall buildings and overhanging trees – these may delay or prevent satellite acquisition).
2. Switch the unit on by pressing and holding down the **Menu** button. ROAD ANGEL Plus flashes its blue and red backlights.



3. If you skipped registration (see page 7) and have not therefore updated your ROAD ANGEL Plus, the screen will show the registration prompt. Press any key to continue (please register and update your unit as soon as possible).
4. ROAD ANGEL Plus starts searching for satellites. The first time the unit is switched on, it must acquire data from a minimum of 4 satellites to establish its position.



With further use, the unit should acquire satellites and establish your location within 1-2 minutes of being switched on.



*ROAD ANGEL Plus automatically switches off if it loses or doesn't acquire sufficient satellite signal for 10 minutes. This is to preserve battery life (see page 5). If your unit is consistently failing to acquire satellite signals within 10 minutes, check the type of windscreen in your vehicle (see page 15).*

5. When ROAD ANGEL Plus has established its position, the display shows your speed (0 if you are stationary). Your unit is now ready for use.



*Some vehicles, for example Renault, Citroen, Peugeot, Vauxhall, Ford, some BMWs and Mercedes, have what is known as an Athermic, comfort or UV windscreen. This interferes with the satellite signal being received by ROAD ANGEL Plus resulting in an intermittent, erratic or absent speed display. To solve this problem, you will need an external antenna; visit [www.blackspot.com/support](http://www.blackspot.com/support) for more information.*

# 6. Hazard Warnings

## Understanding the Display

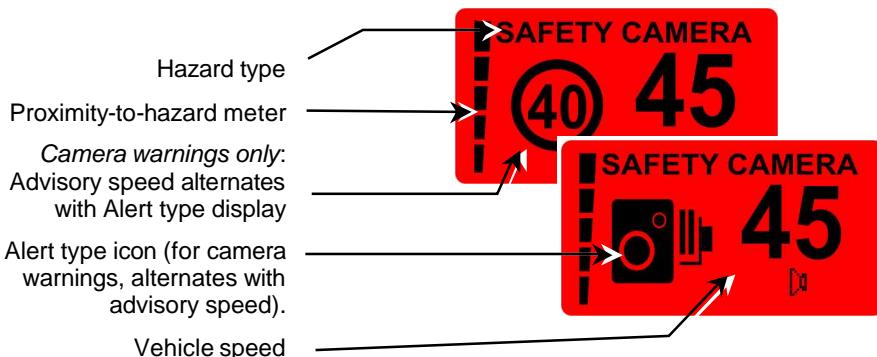
### Standby mode

In its normal standby mode, ROAD ANGEL Plus's display shows your speed, compass heading or time, and satellite reception (indicated by a four-bar column – the more bars displayed, the greater the satellite reception).



### Alert mode

When you are approaching a known danger zone, ROAD ANGEL Plus shows the type of hazard on the left side of the display. If you are approaching a fixed, temporary or average speed camera location and travelling *below* the advisory speed limit, the display remains blue (see *Intelligent Backlight*, page 28). If you are travelling *above* the advisory limit, or approaching a black spot or Primary school, the display backlight changes to red. If your speed subsequently drops below the advisory speed limit, the backlight returns to the normal blue colour.



In addition:

- The Proximity-to-hazard meter increases from 1 to 5 bars as you get closer to the danger zone.
- Speech warnings will tell you the type of zone followed by an audible tone that increases with your proximity to the hazard.

When you have passed the danger, ROAD ANGEL Plus returns to Standby Mode.



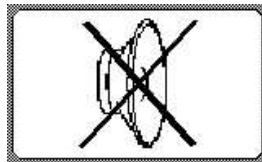
**USE THE ADVISORY SPEED LIMIT FOR GUIDANCE ONLY. YOU SHOULD ALWAYS KNOW THE SPEED LIMIT AND TAKE ACCOUNT OF DRIVING CONDITIONS.**

## **Audio and Speech Warnings**

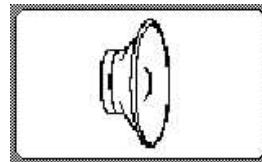
You can stop audio and speech warnings temporarily when you are in a danger zone, or permanently from Standby mode:

- To temporarily mute audio output when in a danger zone, press the STORE button. When you have passed out of the danger zone, ROAD ANGEL Plus restores audio output.
- To stop all audio output when in Standby mode, press and hold down the DELETE button for about two seconds. The screen will display a symbol (see below) indicating that audio output is muted.

To restore audio output, press and hold the DELETE button again for about two seconds. The screen shows the Restore audio symbol (see below).



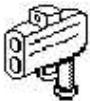
*Mute audio*



*Restore audio*

To customise audio and speech alerts for each type of danger zone, adjust the appropriate settings in the Alerts menu (see page 26).

## Alert Types

Alert Type	Icon	Location Type
Safety Camera		You are approaching a fixed speed camera ahead. ROAD ANGEL Plus only alerts you if you are travelling in the direction that the camera enforces.
Mobile Camera		Temporary speed camera ahead, often seen in road works, or at a Speedmaster location.
Average		You are entering an average speed detection zone. The icon remains on screen whilst you are inside the enforcement zone.
Blackspot		You are approaching an accident black spot – an area identified by the police and local authorities.
School Zone		<i>Optional setting:</i> You are near a Primary school (see <b>Alerts</b> on page 26).
Congestion		<i>Optional setting:</i> You are approaching a congestion charging zone (see <b>Alerts</b> on page 26).
Overspeed		<i>Optional setting:</i> You are exceeding the speed limit you have set in the Alerts menu (see <b>Alerts</b> on page 26).
Int. Laser (detected by internal sensors)		Your vehicle is being targeted by a laser speed measurement device. Laser warnings require immediate action – your speed may already have been measured. ROAD ANGEL Plus may not detect a mobile laser gun if your vehicle is targeted at close range: 200m or less (see <b>Laser Detection</b> on page 31 for more details).
Ext. Laser (detected by external sensor connected to AUX port)		

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### How accurate is the speed measurement?

ROAD ANGEL Plus calculates your vehicle speed from GPS data. The value is updated every second and, at a constant speed, is highly accurate. If you are accelerating or decelerating, the displayed value will lag behind the actual speed by a small margin.

You may find a difference between the reading on your vehicle's speedometer and ROAD ANGEL Plus. This is because all vehicles are manufactured with a tolerance on the speedometer to allow for tread depth, tyre size and pressure changes. Generally, your speedometer overestimates your speed.

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### How much warning does ROAD ANGEL Plus provide?

ROAD ANGEL Plus has three proximity options for fixed cameras: 250m, 500m or 1000m (see page 27). There is an additional setting called SDS or Speed Distance Sensitivity. If you activate this setting, the proximity warning distance is doubled if your speed is over 50mph.

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### My ROAD ANGEL Plus does not display my speed, it just displays the satellites symbol.

See 'My car has a UV/heated windscreen' on page 15.

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### Why do I get a warning for a camera that is not there?

Has the unit been updated recently? The camera may have been removed from the database.

ROAD ANGEL Plus may be warning you about a camera on a parallel road very close to the road you are travelling on. If this is the case, the proximity bars may switch off before they go all the way to maximum. This problem is more likely to occur if your ROAD ANGEL Plus is set to a long alert distance setting in the Alerts menu (see page 26).

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### I am not getting a warning on all fixed cameras

Has the unit been updated recently? Carry out an update to add all the new locations. ROAD ANGEL Plus is directional: it ignores cameras that are enforcing the speed limit in the opposite direction.

## 7. Updating the Database

Your ROAD ANGEL Plus is capable of storing up to 50,000 unique danger zones (see page 4). As soon as possible after your purchase, you should:

- REGISTER the unit online at [www.blackspot.com](http://www.blackspot.com) (see page 6).
- Download the latest version of the update software.
- Download the latest version of the database. You cannot update your ROAD ANGEL Plus until your registration has been processed – this can take up to 24 hours.

We recommend that you update your ROAD ANGEL Plus on a regular basis, as safety camera locations are constantly changing. With new locations being added and old cameras being removed, we recommend a fortnightly update. If you are a high mileage motorist, using unfamiliar roads, you may want to update your database weekly. You should also update the database before you set off on a long trip.

To update ROAD ANGEL Plus, you will need to install the update software on a Windows PC with Internet access. Installation instructions are available online, explaining how to download and install the software, and how to set up the USB communications between your PC and ROAD ANGEL Plus.

### System requirements

- A PC with Internet access running Microsoft Windows 98SE, ME, 2000 or XP
- Internet Explorer version 5.5 or above



*We do not support Apple Macs*

## Updating

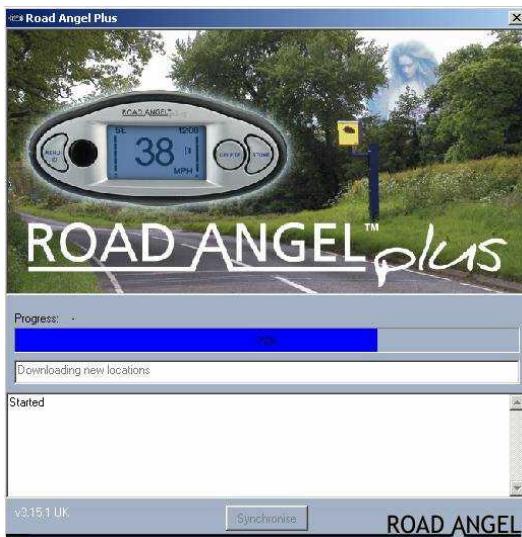
1. Switch on your ROAD ANGEL Plus (if the internal battery is flat, you will need to connect it to the PC first).
2. Connect your ROAD ANGEL Plus to the PC using the USB cable.

ROAD ANGEL Plus will recognise that it is connected to the PC and display the message *Connected to PC* on an unlit background. If this message is not displayed, you will need to install the USB drivers – visit [www.blackspot.com](http://www.blackspot.com), click on Customer Support and select ROAD ANGEL Plus for further information.

3. With your Internet connection active, start the ROAD ANGEL Plus updating software by double-clicking on the icon on your desktop.
4. Click on the **Synchronise** button.
5. Your ROAD ANGEL Plus is updated from the central database. Any additions you have made to your database are downloaded for confirmation and possible inclusion in future updates.



**i** *You may need to configure your firewall or Internet Security software to allow the update software access to the Internet. Please refer to your product support guide.*



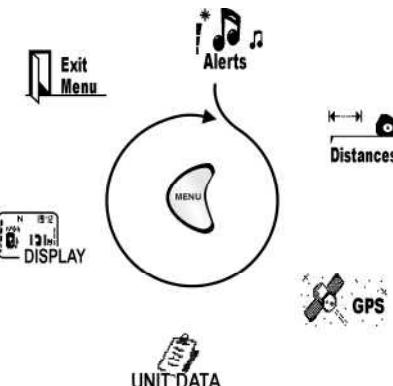
*The ROAD ANGEL Plus updating software in action*

## 8. Customising ROAD ANGEL Plus

You can change the way ROAD ANGEL Plus works by adjusting its menu settings. Press the MENU button repeatedly to view the menus and cycle through them.

ROAD ANGEL Plus's properties are arranged in the following menus:

<b>Alerts</b>	How ROAD ANGEL Plus alerts you to road dangers with audio and visual prompts.
<b>Distances</b>	Set the distance at which ROAD ANGEL Plus commences its alerts.
<b>GPS</b>	GPS information: RescueLoc (see page 27).
<b>Unit Data</b>	Technical information about your ROAD ANGEL Plus: its serial number and firmware version.
<b>Display</b>	Screen contrast, speed units, time setting and intelligent backlight.



After several seconds of inactivity on a menu screen, the display will return to normal mode.

### Changing Settings

Locate the property you want to change, and make a note of:

- The menu it is in, for example: *Alerts*.
- The position of the property within the menu. Each menu and property has an associated number; ROAD ANGEL Plus displays the menu and property numbers in the lower left corner of the screen. For example, *Alerts* is menu 1 and *Camera alert single beep* is property 2 within the menu. For this property, ROAD ANGEL Plus displays 1-2.

 You can use this notation to find a setting quickly. For example, Camera Alert single beep is setting 1-2. To view this quickly, press MENU once, then DELETE, and then MENU twice more.

*Illustration of the procedure for changing ROAD ANGEL Plus's settings: how to edit the Camera Alert Volume Setting.*

**1.** Press MENU to enter ROAD ANGEL Plus's menu mode. The Alerts menu icon is displayed.

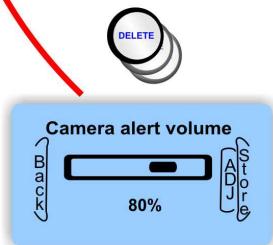
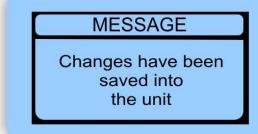


You use the MENU, DELETE and STORE buttons to navigate through the menus and change settings. The exact function of the buttons at each stage of the procedure is shown on-screen.

**7.** ROAD ANGEL Plus confirms the change and then returns to its Standby display mode.

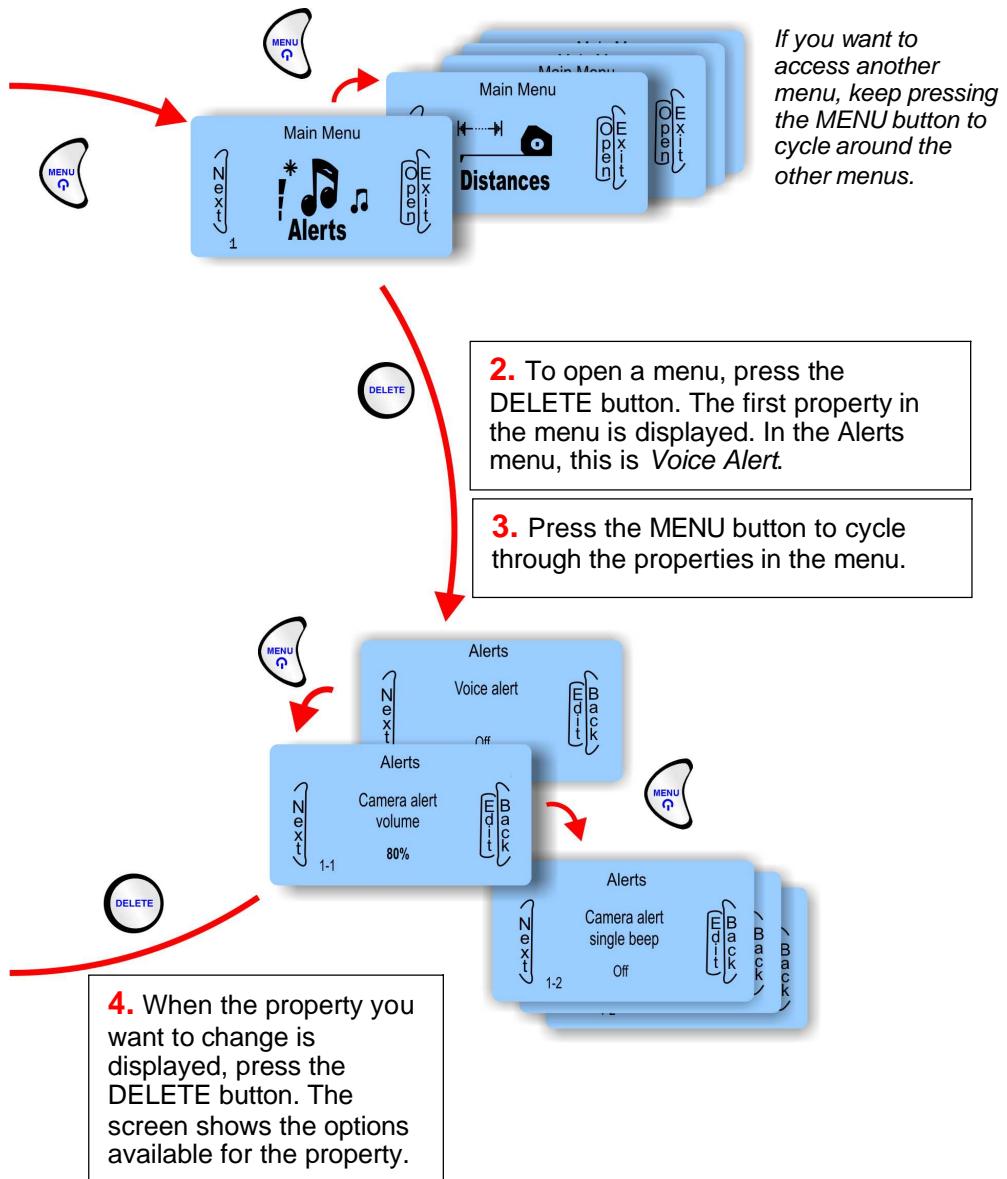
**6.** When the screen displays the setting you require, press the STORE button. The property is updated with the new value.

**5.** Press the DELETE button to adjust the value of the property. If there are a number of options, you may need to press the DELETE button several times.





PLEASE ONLY CHANGE MENU SETTINGS  
WHEN IT IS SAFE TO DO SO.



## Menu Settings

The following sections list all the editable properties in each of the menu categories.

### Alerts

Settings in the Alerts menu determine how ROAD ANGEL Plus warns you about road hazards.

No	Property	Details	Options (factory setting in bold)
1-0	<i>Voice Alert</i>	Switch voice alerts on or off.	Off... <b>On</b>
1-1	<i>Camera Alert volume</i>	Change the sound level of safety camera related warnings.	0..20...40...60... <b>80</b> ...100%
1-2	<i>Camera alert single beep</i>	Switch alert on or off, as each proximity bar counts up it will emit a single beep.	Off...On
1-3	<i>Safety Alert Volume</i>	Change the sound level for Blackspot, School and Congestion related warnings.	0..20...40...60... <b>80</b> ...100%
1-4	<i>Safety Alert single beep</i>	Switch alert on or off, as each proximity bar counts up it will emit a single beep.	Off...On
1-5	<i>Blackspot alert</i>	Switch Blackspot alerts on or off.	Off... <b>On</b>
1-6	<i>School zone alert</i>	Switch School alerts on or off.	Off...On
1-7	<i>Congestion zone alert</i>	Switch Congestion zone entry warnings on or off.	Off...On
1-8	<i>Overspeed alert</i>	Set a speed at which the unit will warn if you exceed the speed.	Off...25 – 165
1-9	<i>Laser Alert Volume</i>	Change the sound level of laser alert warnings	0..20...40...60... <b>80</b> ...100%
1-10	<i>Laser Alert</i>	Switch <i>internal</i> laser detection on or off	Off... <b>On</b>
1-11	<i>Slow speed automate</i>	When travelling less than 15MPH the unit will not give an audible warning. If you enter a zone below 15MPH you will hear a single beep, followed by the proximity count up.	Off...On
1-12	<i>Speed sensitive volume</i>	Adjust the warning volumes depending on how fast the vehicle is travelling.	Off...On

No	Property	Details	Options (factory setting in bold)
1-13	<i>Startup Tune</i>	Choose whether unit starts up silently, with the 'ROAD ANGEL' announcement, or with a double-tone beep.	Off... <b>Voice</b> ...Tone

## Distances

With its factory setting, ROAD ANGEL Plus alerts you to a hazard when you are within 250m of it; you can change this to 500m or 1000m. In addition, ROAD ANGEL Plus has a feature to increase the warning distance when you are travelling over 50mph.

No	Property	Details	Options (factory setting shown in bold)
2-0	<i>Alert distance</i>	Adjusts the warning range as you approach danger zones.	<b>250</b> ...500...1000m
2-1	<i>Speed distance sensitivity</i>	Doubles the advanced warning at 50MPH and above.	Off...On

## GPS

The GPS menu allows you to view your precise GPS position so that you can identify your location to rescue services (*RescueLoc*).

No	Property	Details	Options (factory setting shown in bold)
3-0	<i>GPS RescueLoc</i>	Read off exact GPS position (requires satellite acquisition) – can be quoted to rescue services.	<i>Read only</i> Latitude and Longitude, in degrees, minutes and seconds.

## Unit Data

This menu provides technical information about your ROAD ANGEL Plus: its serial number and firmware version.

No	Property	Details	Options (factory setting shown in bold)
4-0	<i>Unit serial number</i>	Serial number of ROAD ANGEL Plus unit	<i>Read only</i> ; 8 digit number
4-1	<i>Firmware version</i>	ROAD ANGEL Plus firmware version	<i>Read only</i> , in format x.xx

## Display

Using this menu, you can change the appearance of the display: its contrast and the speed units in use. You can also adjust the clock to take account of daylight saving time and enable or disable the intelligent backlight option (see page 17).

**Note:** You cannot adjust the brightness of the display – use the visor to shade the display from bright sunlight (see page 13).

No	Property	Details	Options (factory setting shown in bold)
5-0	<i>Contrast</i>	Adjust the contrast of the ROAD ANGEL Plus display.	0 – 19 ( <b>10</b> )
5-1	<i>Speed units</i>	Change displayed speed between mph and km/hr	<b>MPH....KMH</b>
5-2	<i>Clock adjust</i>	Change time – ROAD ANGEL Plus uses GPS data; may require offset to account for daylight saving time.	± 20 hours in ½ hour intervals. ( <b>+1.00</b> )
5-3	<i>Intelligent backlight</i>	Maintains blue backlight (instead of red warning colour) when approaching camera location if vehicle speed is below advisory speed limit	<b>On ... Off</b>

# 9. Adding and Deleting Danger Zones

Blackspot Interactive Ltd is constantly updating the central database of danger zones. You can be of great value to all ROAD ANGEL Plus users by adding any new zones you encounter to your unit's own database. When you subsequently update your ROAD ANGEL Plus, this data can be verified by Blackspot Interactive Ltd before being added to the central file.

 **PLEASE ONLY ADD OR DELETE DANGER ZONES WHEN IT IS SAFE TO DO SO.**

## Deleting Zones

You can delete any of the locations stored in the ROAD ANGEL Plus database. When your ROAD ANGEL Plus alerts you to the required danger zone:

- Press DELETE.
- Confirm the deletion by pressing DELETE again.



*When a location has been deleted it can only be restored by re-entering the location (see Adding new locations, below) or by requesting a factory reset for your next update: email support@blackspot.com with your serial number and contact details.*

***Note: By using a factory reset all your personally stored locations will be lost.***

## Adding New Locations

You may add new locations to the FIXED, MOBILE, AVERAGE, BLACKSPOT and SCHOOL areas of your ROAD ANGEL Plus database. When you update your ROAD ANGEL Plus, these new locations will also be downloaded to the central database, and can then be verified by Blackspot technicians for inclusion in future updates.



*ROAD ANGEL Plus needs to be travelling in excess of 4 MPH to calculate the heading for the location.*

When your vehicle is precisely alongside the new location:

1. Press STORE once. This will confirm your location.
2. Press DELETE and choose the type of zone you want to store.
3. Press STORE to confirm your choice.

## **Adding an Average Speed Monitoring Section (SPECS Zone)**

Store an average speed monitoring area only if you are absolutely sure of the start and finish points. When passing underneath the first 'start' SPECS camera carry out the following:

1. Press STORE once to store the first camera position.
2. Press DELETE to select the location type: AVERAGE.
3. Press STORE to confirm.
4. When you are underneath the finish camera, press any key to confirm the finish position.

The section of average speed monitoring is now stored.



*If you press STORE by mistake, you have the option to cancel by pressing the MENU button.*

# 10. Background Information

## About Global Positioning Satellites (GPS)

Operational since 1990, 24 GPS satellites orbit the earth at a height of 11,000 miles. At any given point on the globe, at least 4 satellites are in view at any one time. Using sophisticated aerials and triangulation techniques, units such as ROAD ANGEL Plus are able to compute your exact position with great accuracy.

## *Laser Detection*

### **How mobile laser traps operate**

Police Laser Guns work by firing a pulsed beam of light at a vehicle and measuring the time taken for it to return - this can take as little as a third of a second. The beam is conical: at greater distances from the gun, it is wider and more diffuse. However, at short distances (<200m), the enforcement officer can be very precise in targeting a vehicle. Although any part of a vehicle can be targeted, in most cases, the enforcement officer will aim at the number plate because it is vertical to the road.

### **How the enforcement officer chooses which vehicles to target**

Even though the police have equipment for measuring and recording the speeds of motorists, it is down to the officer using the equipment to choose which vehicle to target.

The police are not checking every vehicle; guidelines state that an officer can only measure the speed of a vehicle that they believe to be exceeding the posted limit. This is why you may see a gun or van nearby, but will not get a warning alarm from ROAD ANGEL Plus as you drive by.

## Targeting Explained

### Short range targeting



*Short range (<200m) – Normal Police target area*



At 200m the beam of the laser can be as little as 200mm across. If the Laser Gun is targeting your number plate, it is likely that your dashboard mounted ROAD ANGEL Plus **will not** detect the signal.

### Long range targeting



*Long range (200m -1000m)*

At long range, it is not possible for the enforcement officer to choose which part of the vehicle to target. On some Laser Guns, the sight is bigger than the vehicle. Wherever you have fitted ROAD ANGEL Plus, it is possible that a laser gun targeted in your direction (not necessarily at your car) may trigger it.

## Following a vehicle being targeted



*Following a vehicle being targeted (200m – 1000m) – effectiveness dramatically reduced*

At short range it is difficult to detect, but if the vehicle in front is targeted from long to medium range it is possible to detect as long as the sensor is fitted to the front windscreens.

## Rear detection of laser



*Rear Detection*

When the vehicle is targeted from the rear, the laser signal will pass thorough the rear windscreens and trigger a LASER ALERT as long as no obstructions are in the way. ROAD ANGEL Plus must be visible from the rear and not obstructed by headrests, high cargo, passengers or following vehicles.

## Speed Cameras and Black Spots

This section describes the type of cameras and road hazards covered by ROAD ANGEL Plus:



### Gatso

The most common type of speed camera – used in fixed positions mounted on poles at the roadside. Measures vehicle speed using radar and, if the speed limit has been exceeded, photographs the rear of the vehicle. Uses a flash unit inside the camera cabinet or mounted on a gantry to illuminate the offending vehicle's rear number plate. ROAD ANGEL Plus relies on up-to-date database information for detection.



### TruVelo

Measures vehicle speed using sensor strips in the road and photographs the front of a speeding vehicle, along with the driver. Uses an infra-red flash. ROAD ANGEL Plus relies on up-to-date database information for detection.



### SPECS

Takes a digital photograph of your vehicle at the 'start' point and then another a set distance further down the road. If your average speed is greater than the speed limit between these two cameras you are automatically prosecuted. ROAD ANGEL Plus relies on up-to-date database information for detection.



### **Watchman**

Measures vehicle speed and, if the speed limit has been exceeded, takes a photograph of the rear of the vehicle. Can be accessed remotely allowing operators to download live video, stored images or data. ROAD ANGEL Plus relies on up-to-date database information for detection.



### **Speedcurb**

Measures the speed of vehicles in the monitored section of road using pressure sensors in the road surface. If the speed limit has been exceeded, it takes a photograph of the rear of the vehicle. Uses a flash module for night-time operation. ROAD ANGEL Plus relies on up-to-date database information for detection.



### **Traffiphot**

Uses pressure sensors in the road (similar to Speedmaster – see below) to measure vehicle speed and photographs the rear of any speeding vehicle. Not to be confused with red-light cameras. ROAD ANGEL Plus relies on up-to-date database information for detection.



### **Speedmaster**

Semi-permanent (fixed location but only used part-time), system that uses pressure sensors in the road to measure vehicle speed. Connects to a camera on a tripod for evidence of any offence. ROAD ANGEL Plus relies on up-to-date database information for detection.



### **Safety Camera Vans**

Mobile enforcement vehicles use Laser guns to measure vehicle speed and, normally, video equipment to record the evidence of any offence. Vehicles can be used in several locations on the same day. ROAD ANGEL Plus relies on its laser detection capability to alert you (see page 31).



### **Mobile Laser**

Hand-held devices that record your speed in either direction. ROAD ANGEL Plus relies on its laser detection capability to alert you (see page 31).



### **Black spot**

A specific location, identified by the police and local authorities, where a high number of accidents have occurred e.g. a difficult junction. Mobile speed enforcement units often target black spots. ROAD ANGEL Plus relies on up-to-date database information to identify black spots.



### **Congestion**

Drivers must pay in advance or on the day of travel to enter the designated zone during the scheme's hours of operation. There are substantial penalties if you do not pay the congestion charge.

### **Primary Schools**

You can set up ROAD ANGEL Plus to alert you whenever you are within 250 metres of a primary school.

# 11. Accessories

The following table lists the accessories available for ROAD ANGEL Plus. Please visit the ROAD ANGEL Plus online shop at [www.blackspot.com](http://www.blackspot.com) for more details.

Item	Details
<b>Bike Kit</b>	Mounting bracket and hard-wire kit for motorbikes.
<b>Dash Pad</b>	Adhesive pad for mounting ROAD ANGEL Plus directly onto dashboard.
<b>Dual Lock</b>	Two-piece, recloseable fastener.
<b>Windscreen Mounting Kit</b>	Includes mounting bracket, anti-vibration dampers and two clear suction cups.
<b>12v Cigar Lead (Straight)</b>	2.5 metre with standard fused cigar plug.
<b>12v Cigar Lead (Sprung)</b>	1.5 metre extendable with standard fused cigar plug.
<b>Earpiece</b>	2 metre with 3.5mm mono jack-plug.
<b>Optional External Antenna (2m)</b>	Connects to ANT socket on ROAD ANGEL Plus – for use in vehicles with UV screens or for discrete mounting.



*Blackspot Interactive Ltd. has made every effort to ensure that all the information contained in this manual is accurate and reliable. However, the information is subject to change without notice.*

